

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the captioned application.

Listing of Claims:

Please cancel claims 6-10 and 16-20 and enter the following new claims 21-34

Claim 1. (Original) An apparatus for explosively severing a length of pipe having an internal flowbore, said apparatus comprising: a tubular exterior housing having an interior barrel extending between opposite distal ends of the barrel; a plurality of high explosive pellets in axial alignment and bound together as a singular and independent unit that may be selectively inserted within said barrel and withdrawn unexploded therefrom as a single unit; and, electrically initiated detonation means engaging the explosive pellet unit.

Claim 2. (Original) An apparatus as described by claim 1 wherein said detonation means comprises detonators at opposite ends of said pellet unit.

Claim 3. (Original) An apparatus as described by claim 1 wherein the detonators respective to said opposite ends are connected for simultaneous detonation.

Claim 4. (Original) An apparatus as described by claim 3 wherein said opposite end detonators resiliently bear compressively against respective ends of said pellet unit.

Claim 5. (Original) An apparatus as described by claim 3 wherein one end of said exterior housing is selectively detached, with one of said detonators, from the remainder of said exterior housing for loading said pellet unit into said barrel.

Claim 6. (Canceled)

Claim 7. (Canceled)

Claim 8. (Canceled)

Claim 9. (Canceled)

Claim 10. (Canceled)

Claim 11. (Original) A method of severing a length of pipe having an internal flow bore comprising the steps of:

assembling a plurality of high explosive pellets into a singular, columned unit;
depositing said columned unit into a tubular barrel;
resiliently engaging at least one end of said columned unit with detonator means;
positioning said tubular barrel within said flow bore at a predetermined location along the length of said flow bore; and,
electrically initiating said detonator means.

Claim 12. (Original) A method of severing a length of pipe as described by claim 11 wherein detonator means engage opposite ends of said columned unit of high explosive pellets.

Claim 13. (Original) A method of severing a length of pipe as described by claim 12 wherein opposite end detonator means are simultaneously initiated.

Claim 14. (Original) A method of severing a length of pipe as described by claim 11 wherein said plurality of high explosive pellets are unitized in a column separate from said tubular barrel and inserted in said tubular barrel as a singular unit prior to positioning said barrel within said flow bore.

Claim 15. (Original) A method of severing a length of pipe as described by claim 14 wherein said plurality of pellets are formed for meshed engagement with unitizing structure whereby said unitizing structure and meshed pellets are inserted within or removed from said tubular barrel as a singular unit.

Claim 16. (Canceled)

Claim 17. (Canceled)

Claim 18. (Canceled)

Claim 19. (Canceled)

Claim 20. (Canceled)

Claim 21. (New) An apparatus for explosively severing a length of pipe, said apparatus comprising:

- (a) a tubular housing having an internal barrel space extending between opposite distal ends of said housing, said barrel space being configured to accommodate a column of explosive material between said distal ends;
- (b) a selectively removed end closure for environmentally sealing one distal end of said barrel space; and,
- (c) explosive detonation means disposed proximate of each distal end for substantially engaging said column of explosive material, at least one said detonation means secured to said selectively removed end closure.

Claim 22. (New) An apparatus for explosively severing a length of pipe as described by claim 21 wherein detonation means disposed at a distal end of said barrel space opposite from said removable end closure is resiliently biased toward said end closure.

Claim 23. (New) An apparatus for explosively severing a length of pipe as described by claim 21 wherein said detonation means are electrically initiated and are linked by electrical continuity for substantially simultaneous detonation.

Claim 24. (New) An apparatus for explosively severing a length of pipe as described by claim 23 wherein said electrical continuity is sustained during a physical separation of said end closure from said barrel space.

Claim 25. (New) An apparatus for explosively severing a length of pipe, said apparatus comprising:

- (a) a tubular housing having an internal barrel space extending between opposite distal ends of said housing, said barrel space being configured to accommodate a column of explosive material between said distal ends;
- (b) a selectively removed end closure for environmentally sealing one distal end of said barrel space;
- (c) electrically initiated detonation means disposed proximate of each distal end with at least one detonation means secured to said selectively removed end closure; and,
- (d) electrical continuity linking said detonation means for substantially simultaneous ignition, said continuity being sustained while said end closure is removed from said one distal end of said barrel space.

Claim 26. (New) An apparatus for explosively severing a length of pipe as described by claim 25 wherein detonation means disposed at a distal end of said barrel space opposite from said removable end closure is resiliently biased toward said end closure.

Claim 27. (New) An apparatus for explosively severing a length of pipe, said apparatus comprising:

- (a) a tubular housing having an internal barrel space extending between opposite distal ends of said housing;
- (b) a selectively removed end closure for environmentally sealing one distal end of said barrel space;
- (c) electrically initiated detonation means disposed proximate of each distal end with at least one detonation means secured to said selectively removed end closure;
- (d) electrical conductors linking said detonation means for substantially simultaneous ignition; and,
- (e) an explosive loading assembly for unitizing a column of explosive independently of said housing, said unitized column of explosive being selectively inserted as a singular unit into said barrel space by the removal of said end closure from the one distal end of said barrel space without interrupting conductor continuity of an electrically conductive linkage among said detonation means.

Claim 28. (New) An apparatus for explosively severing a length of pipe, said apparatus comprising:

- (a) a tubular housing having an internal barrel space extending between opposite distal ends of said housing;
- (b) a selectively displaced end closure for environmentally sealing one distal end of said barrel space;
- (c) electrically initiated detonation means disposed proximate of each distal end with at least one detonation means secured to said selectively displaced end closure;
- (d) electrical conductors linking said detonation means for substantially simultaneous ignition; and,
- (e) an explosive loading assembly for unitizing a plurality of explosive pellets about a substantially central rod-like structure independently of said housing and said detonating means, said unitized plurality of explosive pellets being selectively inserted as a singular unit within said barrel space between said detonation means by the displacement of said end closure from the one distal end of said barrel space without interrupting conductor continuity of an electrically conductive linkage among said detonation means.

Claim 29. (New) An apparatus for explosively severing a length of pipe, said apparatus comprising:

- (a) a tubular housing having an internal barrel space extending between opposite distal ends of said housing;
- (b) a selectively removed end closure for environmentally sealing one distal end of said barrel space;
- (c) electrically initiated detonation means disposed proximate of each of said distal ends with at least one detonation means secured to said selectively removed end closure;
- (d) electrical conductors linking said detonation means for substantially simultaneous ignition; and,
- (e) an explosive loading assembly for unitizing an axial column of explosive pellets about a substantially central rod-like structure, said rod-like structure having a first length, the assembly of said explosive pellets extending along said rod-like structure for a second length, said first length being greater than said second length to provide a manual handling extension of said rod-like structure for manually inserting and removing undetonated pellets relative to said barrel space.

Claim 30. (New) An apparatus for explosively severing a length of pipe, said apparatus comprising:

- (a) a tubular housing having an internal barrel space extending between opposite distal ends of said housing;
- (b) a selectively displaced end closure for environmentally sealing one distal end of said barrel space;
- (c) electrically initiated detonation means disposed proximate of each distal end with at least one detonation means secured to said selectively displaced end closure;
- (d) electrical conductors linking said detonation means for substantially simultaneous ignition;
- (e) an explosive loading assembly for unitizing an axial column of explosive pellets about a substantially central rod-like structure, said rod-like structure having a first length and said explosive pellets assembled along said rod-like structure for a second length that is less than said first length to provide a manual handling extension of said rod-like structure for inserting and removing undetonated pellets relative to said barrel space; and,
- (f) receptacle space within said end closure to accommodate said rod-like structure extension when said end closure seals said one distal end of said barrel space.

Claim 31. (New) An apparatus for explosively severing a length of pipe, said apparatus comprising:

- (a) a tubular housing having an internal barrel space extending between opposite distal ends of said housing;
- (b) a selectively displaced end closure for environmentally sealing one distal end of said barrel space;
- (c) electrically initiated detonation means disposed proximate of each distal end with at least one detonation means secured to said selectively displaced end closure and a detonation means respective to the other end of said barrel space having a resilient bias toward the said one end;
- (d) electrical conductors linking said detonation means for substantially simultaneous ignition; and,
- (e) an explosive loading assembly for unitizing a column of explosive independently of said housing, said unitized column of explosive being selectively inserted as a singular unit within said barrel space against the bias of said other end detonation means by the displacement of said end closure from the one distal end of said barrel space without interrupting conductor continuity of an electrically conductive linkage among said detonation means.

Claim 32. (New) A well pipe severing method comprising the steps of:

- (a) fabricating an explosive enclosure tube having an elongated explosive receptacle space extending between opposite distal ends, one of said distal ends comprising a removable tube end closure;
- (b) positioning electrically initiated detonators at said distal ends, at least one of said detonators positioned on said removable end closure;
- (c) at a first location distal from a well pipe, arming said detonators by connecting an electrically conductive linkage between detonators at opposite distal ends of said receptacle space;
- (d) transporting said tube with said armed detonators to a second location proximate of a well pipe, said tube being substantially devoid of high explosive material between said armed detonators during such transport;
- (e) at said second location, separating said removable end closure from said enclosure tube to insert a column of explosive material into said receptacle space without interrupting said electrically conductive linkage between said detonators; and,
- (f) replacing said end closure to environmentally seal said receptacle space and engage opposite ends of said explosive column by said armed detonators;
- (g) connecting said armed detonators to a controlled energy source;
- (h) positioning said enclosure tube at a desired position within said well pipe; and,
- (i) discharging said detonators.

Claim 33. (New) A method of severing a length of pipe comprising the steps of:

- (a) assembling a plurality of high explosive pellets into a singular, columned unit having no detonation means combined therewith;
- (b) depositing said columned unit into a tubular barrel;
engaging a first detonation means by said unit as it is deposited into said barrel, said first detonation means being secured to one end of said tubular barrel and resiliently biased toward an opposite end of said barrel;
- (c) environmentally enclosing said unit within said barrel by returning a selectively removed barrel end closure, said end closure having a second detonation means secured thereto, an electrically conductive link between said first and second detonation means remaining uninterrupted as said unit is inserted into said tubular barrel;
- (d) positioning said tubular barrel within a pipe flow bore; and,
- (e) electrically initiating said detonator means.

Claim 34. (New) A method of severing a length of pipe comprising the steps of:

- (a) assembling a columned unit of explosive by aligning a plurality of high explosive pellets serially along a portion of the length of a rod-like structure that projects through an aperture in said pellets, the length of said structure being greater than a serial assembly length of said pellets;
- (b) assembling an environmental enclosure having a detachable end closure for a tubular barrel space within said enclosure, a first detonation means resiliently secured to one end of said barrel space and a second detonation means secured to said detachable end closure, said detonation means being connected by electrical conductors;
- (c) inserting said explosive unit into said barrel space without disturbing an electrical continuity of connections between said detonation means;
- (d) enclosing said explosive unit within said barrel space by positioning said detachable end closure;
- (e) selectively connecting said electrical conductors to an electrical energy source;
- (f) positioning the combination of said environmental enclosure and said explosive unit within a pipe flow bore; and,
- (g) electrically initiating said detonator means.